REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Minor errors in the specification and claims have been corrected.

Claims 1, 2, 7 and 8 have been allowed. Claims 3 and 9 have been rejected under 35 U.S.C. § 103 as being obvious over U.S. patent publication 2002/0175036 (Takatori et al) in view of U.S. patent publication 2002/0019293 (Noda et al). This rejection is respectfully traversed.

Applicants wish to thank Examiner To for the courtesy of an interview on January 23, 2006, at which time the outstanding rejection of Claims 3 and 9 was discussed. Claim 3 has been amended based on the Examiner's suggestion at that time. The scope of Claim 3 is not believed to have been materially changed. The substance of the interview is summarized below:

Claims 3 and 9 are directed to a feature of the invention whereby the calculated slip rotation speed is set as the target slip rotation speed in a feedback control of the oil pressure of a lockup clutch in an automatic transmission if a downshift of the automatic transmission is executed. This is shown, for example, at step S118 in Figure 4 wherein the calculated slip rotation speed (calculated at step S114) is set as the target slip rotation speed for the feedback control in the case of the downshift detected at step S106. This is also illustrated in Fig. 5B by the target slip rotation speed assuming the value of the calculated slip rotation speed between times T2 and T3. As a result, a deviation in the feedback control during the downshift becomes zero so that a correction amount for the oil pressure of the lockup clutch becomes constant. It is thereby possible to minimize shift shocks and to advance the completion of the downshift (see paragraph [0017]).

According to the outstanding Office Action, Takatori et al was cited to teach an automatic transmission including a torque converter provided with a lockup clutch, in which the calculated slip rotation speed of the lockup clutch achieves a target slip rotation speed. Takatori et al discloses a lockup control device for a torque converter of an automatic transmission which includes a learning control of an engaging oil pressure of the lock up clutch, wherein in each of the complete lockup region, the slip lockup region and the coasting lockup region, the oil pressure is determined by adding a lockup learning correction amount calculated in the learning control performed in the other lockup regions to a basic initial pressure (paragraph [0012]). Paragraphs [0053]-[0059] of the reference, upon which the Examiner has particular relied, describe steps 122-125 of Figure 2 provided in a coasting lockup feedback control wherein the engine is in an idle running condition with the accelerator pedal released in the lockup region. In this case, the slip rotation speed is held to the target slip speed.

However, as was discussed during the interview, these claims do not simply recite the usual goal of all feedback controls, i.e., to cause the calculated value of the slip rotation speed to be held to a target value. Instead, the claims recite that the calculated slip rotation speed *is set as* the target slip rotation speed if a downshift of the automatic transmission is executed, i.e., *the target value of the slip rotation speed becomes the calculated value.*

Paragraph [0059] of Takatori et al, on the other hand, simply describes the usual result of a feedback control whereby the calculated slip rotation speed is held to the target slip rotation speed. The calculated slip rotation speed is controlled to match the target slip rotation speed but is not *set as* the target slip rotation speed, as is recited in Claims 3 and 9.

It is also significant that Takatori et al does not describe the feedback control as occurring during a downshift of the automatic transmission. Thus there is no teaching in this reference for setting the calculated slip rotation speed as the target slip rotation speed "if a

downshift of the automatic transmission is executed." In recognition of this, the Examiner

has relied upon Noda et al to suggest this feature in Takatori et al. However, Noda et al

would not have motivated one skilled in the art to have incorporated the missing feature of

Claim 3 and 9 in Takatori et al, for a number of reasons.

First, Noda et al, like Takatori et al, has no description of control in the case of a

downshift of an automatic transmission. Noda et al teaches that the working pressure

necessary for engagement of a lockup clutch varies with the input torque to the transmission

(paragraph [0005]), and so sets the working pressure as a function of the input torque. No

combination of Takatori et al and Noda et al would suggest a controller adapted to calculate a

slip rotation speed of a lockup clutch, and set the calculated slip rotation speed as a target slip

rotation speed "if a downshift of the automatic transmission is executed" since no downshift

is described in either reference.

Additionally, the value "dN" described in paragraph 82 of Noda et al, upon which the

Examiner has particular relied, is not a target rotation speed difference according to which the

lockup clutch is controlled. Rather, dN is compared to a reference value dN3 in step 54 to

determine whether the lockup clutch has already been released. It is also compared to

another reference value dN4 in step 57 to determine whether the releasing of the lockup

clutch has been completed. Likewise, step 33 and subsequent steps using dN are executed to

determine the state of the lockup clutch. Thus dN in Noda et al is a value that is used to

determine the state of the lockup clutch and not a target slip rotation speed. Accordingly, the

calculation of dN in Noda et al would not motivate those skilled in the art to have modified

Takatori et al to set a calculated slip rotation speed as the target slip rotation speed if a

downshift of the automatic transmission is executed.

Applicants therefore believe that the present application is in a condition for

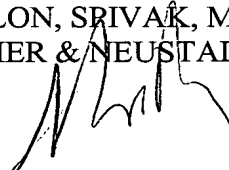allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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